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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/622,425 | 07/21/2003 | Jeffrey Weitz | GLYCO-0012-C02 | 4953 |

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| KHARE, DEVESH | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1623 | |

DATE MAILED: 04/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/622,425 | WEITZ ET AL. | |
| | Examiner | Art Unit | |
| | Devesh Khare | 1623 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *19 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *9-41,46-48 and 50-62* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-41 and 50-62* is/are rejected.

7)☒ Claim(s) *46-48* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Applicant's amendments and remarks filed on 01/19/2006 are acknowledged. Claims 1-8, 42-45 and 49 have been cancelled. New claims 50-62 have been added.

The rejection of claims 9-41 under obviousness-type double patenting, of the Office Action mailed on 10/19/2005, has been overcome through applicants' terminal disclaimer filed on 1/19/2006 over prior patent no. 6,075,013.

The following is new rejection(s) necessitated by Applicant's newly added claims 50-62 filed on 01/19/2006.

Claims 9-41, 46-48 and 50-62 are currently pending in this application.

**Objection**

Claims 46-48 are objected to since they are dependent on the non-elected claim 43 of record.

Claims 46-48 are not been further treated (examined) on the merits.

Appropriate correction is required.

It is noted that the applicant failed to amend claims 46-48 to overcome the objection of record therefore claims 46-48 are not been examined.

***35 U.S.C. 112, second paragraph rejection***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

*The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.*

Claims **9-41** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention of record.

"Modified" is a relative term that renders the claims indefinite in all occurrences. In the absence of the specific modifications to the claimed compound core or distinct language to describe the structural modifications or the chemical names of modified or substituted compounds claimed, the identity of said modified compounds would be difficult to describe and the metes and bounds of said modified compounds applicants regard as the invention cannot be sufficiently determined because they have not been particularly pointed out or distinctly articulated in the claims.

Claims which depend from an indefinite claim which fail to obviate the indefiniteness of the claim from which they depend are also seen to be indefinite and are also rejected for the reasons of record.

**Rejection Maintained**

Rejection of claims **9-41** under 35 U.S.C. 112, second paragraph, is maintained for the reasons of record.

**Response to Arguments**

Applicant's arguments filed on 1/19/2006 traversing the rejection of claims 9-41 under 35 U.S.C. 112, second paragraph have been fully considered but they are not persuasive. Applicant has not addressed the chemical name, structural formula or sufficiently distinct functional language, the particular moieties applicant regards as those which will facilitate modification, requisite to identifying the compound of matter claimed.

Applicants argue, "the term "modified", in the context of this invention, introduces no indefiniteness to the claims". The skilled artisan knows modified means modified molecules, which differ only by the transposition of one atom or a simple functional group for another. Applicant's claims fail to particularly point out such atom or functional group used to modify heparin. Metes and bounds of the modification applicant intends can not be readily ascertained. The presence of the terms "modified" in other document is noted. It is the deficiency in this application, which is at issue.

***35 U.S.C. 112, first paragraph rejection***

***Claims* 22-38** are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention of record. The specification, while being enabling for the use of a modified MLMWH having molecular weight between 5,000-9,000 Daltons in a method for treating a thrombotic condition in a mammal does not reasonably provide enablement for preventing the formation of a thrombus in a mammal at risk of developing thrombosis with MLMWH having molecular weight between 5,000-9,000 Daltons. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

A conclusion of lack of enablement means that, based on the evidence regarding each of the factors below, the specification, at the time the application was filed, would not

have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation.

The factors regarding undue experimentation have been summarized in *In re Wands,* 858 F.2d 731, 8 USPQ2d 1400 (Fed. Circ. 1988) as follows:

(1) The quantity of experimentation necessary (time and expense);

(2) The amount of direction or guidance presented;

(3) The presence or absence of working examples of the invention;

(4) The nature of the invention;

(5) The state of the prior art;

(6) The predictability or unpredictability of the art;

(7) The breadth of the claims; and

(8) The relative skill of those in the art.

1. QUANTITY OF EXPERIMENTATION

With regard to factor one the quantity of experimentation needed, for preventing the formation of a thrombus in a mammal at risk of developing thrombosis with MLMWH having molecular weight between 5,000-9,000 Daltons, applicant intends to utilize a method of prevention, would require undue experimentation. At the very least, experimentation correlative to establishing the broad spectrum of efficacy should be provided. The absence of specific disclosures or the correlation of data to support applicant's assertions, invites the skilled artisan to engage in undue experimentation.

2. GUIDANCE PROVIDED

There is little guidance given in the specification as to the specific use of an effective amount of modified MLMWH having molecular weight between 5,000-9,000 Daltons to a mammal for preventing the formation of a thrombus in a mammal at risk of developing thrombosis. This lack of guidance would indeed impose the burden of undue experimentation in determining the degree, if any, for the prevention of mammal health conditions set forth. There is not seen any guidance in the specification drawn to establishing a correlation between the use of an effective amount of modified MLMWH having molecular weight between 5,000-9,000 Daltons to a mammal and preventing the formation of a thrombus in a mammal at risk of developing thrombosis.

3. WORKING EXAMPLES IN SPECIFICATION

The examples A-D disclose the preparation of MLMWH; clinical results; and comparison of MLMWH with other known ant-coagulants. The EXAMPLES advanced in the instant specification are not seen as sufficient to support the breadth of the claims for use of an effective amount of modified MLMWH having molecular weight between 5,000-9,000 Daltons to a mammal for preventing the formation of a thrombus in a mammal at risk of developing thrombosis.

4. NATURE OF THE INVENTION

It is known in this art that certain MLMWH are useful in prophylaxis and treatment of thrombotic conditions including venous and arterial thrombosis (see Baron et al.). The exact mechanism of action and the effects of these MLMWH may be found in the Baron et al. (Col.4, line 58 thru col.5, line 4 and claims 7-12).

5. STATE OF THE PRIOR ART

The instant claimed method is drawn to the use of an effective amount of modified MLMWH having molecular weight between 5,000-9,000 Daltons to a mammal for preventing the formation of a thrombus in a mammal at risk of developing thrombosis.

The following references are cited to show the state of the prior art:

Baron et al. (U.S. Patent 5,707,973)- disclose that MLMWH are useful in prophylaxis and treatment of thrombotic conditions including venous and arterial thrombosis (see Baron et al.).

Wong et al. (U.S. Patent 6,346,517)- disclose a combination therapy for the treatment of thromboembolic disorders using a low molecular weight heparin.

6. THE PREDICTABILITY OF THE ART

To extrapolate the data from the class of compounds represented by modified MLMWH, for preventing the formation of a thrombus in a mammal at risk of developing thrombosis is not seen to be disclosed in the prior art. Neither the specification nor the prior art provides adequate guidance for equivocating the modified MLMWH, in method for preventing the formation of a thrombus in a mammal at risk of developing thrombosis. The extrapolation is not seen to be based upon data, which would adequately substantiate the prevention of mammal health conditions instantly claimed.

7. BREATH OF THE CLAIMS

Claims 1-8 and 42-45 are drawn to a modified low molecular weight heparin (MLMWH) having a molecular weight between 5000-9000 Daltons and the composition thereof.

Claims 9-41 and 46-48 drawn to a method for treating or preventing thrombotic condition in a mammal with the MLMWH of Group I. Claim 49 drawn to a process for preparing a purified preparation of the MLMWH of Group I.

8. THE RELATIVE SKILL IN THE ART

Further, there is no enabling description of the administration of a pharmacologically acceptable dose of a modified low molecular weight heparin (MLMWH) compound to a mammal, for preventing the formation of a thrombus in a mammal at risk of developing thrombosis. The worker of ordinary skill in the art would not be able to practice the instantly claimed method given the limited guidance provided by the disclosure herein. The mere statements that the compounds of the instant invention are likely to be effective, or expected to be effective on the basis of limited *in vitro* test data, are insufficient to enable the worker of ordinary skill in the art to practice the invention commensurate in scope with these claims. It is well known and established that the "law requires that disclosure in an application shall inform those skilled in the art how to use appellant's alleged discovery, not how to find out how to use it for themselves." *In re Gardner et al.,* 166 USPQ 138(CCPA 1970).

**Rejection Maintained**

Applicant's arguments filed on 1/19/06 traversing the rejection of claims 22-38 under 35 U.S.C. 112, first paragraph have been fully considered but they are not persuasive.

**Response to Arguments**

Applicants argue that "the wide acceptability of using heparin products for prevention of thrombus formation shows that, to the extent any particular factor has any relevance to the enablement issue involved in this application..".

The absence of specific disclosures or the correlation of data to support applicant's assertions, invites the skilled artisan to engage in undue experimentation. Although applicant alleges that several researchers have shown prior to the filing of the priority application that heparins are used for prevention of venous thrombosis in medical or surgical patients (Geerts WH et al.). However, the instant disclosure while being enabling for the use of a modified MLMWH having molecular weight between 5,000-9,000 Daltons in a method for treating a thrombotic condition in a mammal does not reasonably provide enablement for preventing the formation of a thrombus in a mammal at risk of developing thrombosis with MLMWH having molecular weight between 5,000-9,000 Daltons.

**Provisional "Non-Statutory" Double Patenting Rejection**

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Newly added claims 50-62 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8-38 of U.S. Patent No.6, 075,013 ('013) (of record). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims in each of the application and the '013 patent are directed to substantially same subject matter, i.e., in the instant claims the invention is claimed in terms of the specific use of an effective amount of modified MLMWH having molecular weight between 5,000-9,000 Daltons to a mammal for treating or preventing the formation of a thrombus in a mammal at risk of developing thrombosis, while in the '013 patent it is claimed in terms of a method for treating or preventing a thrombotic condition or the formation of a thrombus in a mammal by administering to said mammal a modified MLMWH having an anti-factor IIa activity of about 40 U/mg to about 100 U/mg, and an anti-factor Xa activity of about 90 U/mg to about 150 U/mg. The modified MLMWH having an anti-factor IIa activity of about 40 U/mg to about 100 U/mg, and an anti-factor Xa activity of about 90 U/mg to about 150 U/mg may well be varied in terms of its inherent activity, in this case to accomplish a method for treating or preventing the formation of a thrombus in a mammal at risk of developing thrombosis.

It would have been obvious to one having ordinary skill in this art, at the time the claimed invention was made to have accomplished a modified MLMWH having molecular weight between 5,000-9,000 Daltons of the '013 patent which have the same use and effect. One having ordinary skill in the art would have been motivated, to use the modified MLMWH having molecular weight between 5,000-9,000 Daltons of the '013 patent, which have the same, use and affect.

The examiner notes the instant claims and the '013 claims do indeed substantially overlap therefore this obviousness-type double patenting rejection is necessary to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees.
Therefore the claims are co-extensive.
This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Applicant's newly added claims necessitated the new ground(s) of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07 (a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Devesh Khare whose telephone number is (571)272-0653. The examiner can normally be reached on Monday to Friday from 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anna Jiang, Supervisory Patent Examiner, Art Unit 1623 can be reached at (571)272-0627. The official fax phone numbers for the organization where this application or proceeding is assigned is (703) 308-4556 or 308-4242.
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

Devesh Khare, Ph.D.,J.D.
Art Unit 1623
April 3, 2006

4/3/06
Anna Jiang, Ph.D.
Supervisory Patent Examiner
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